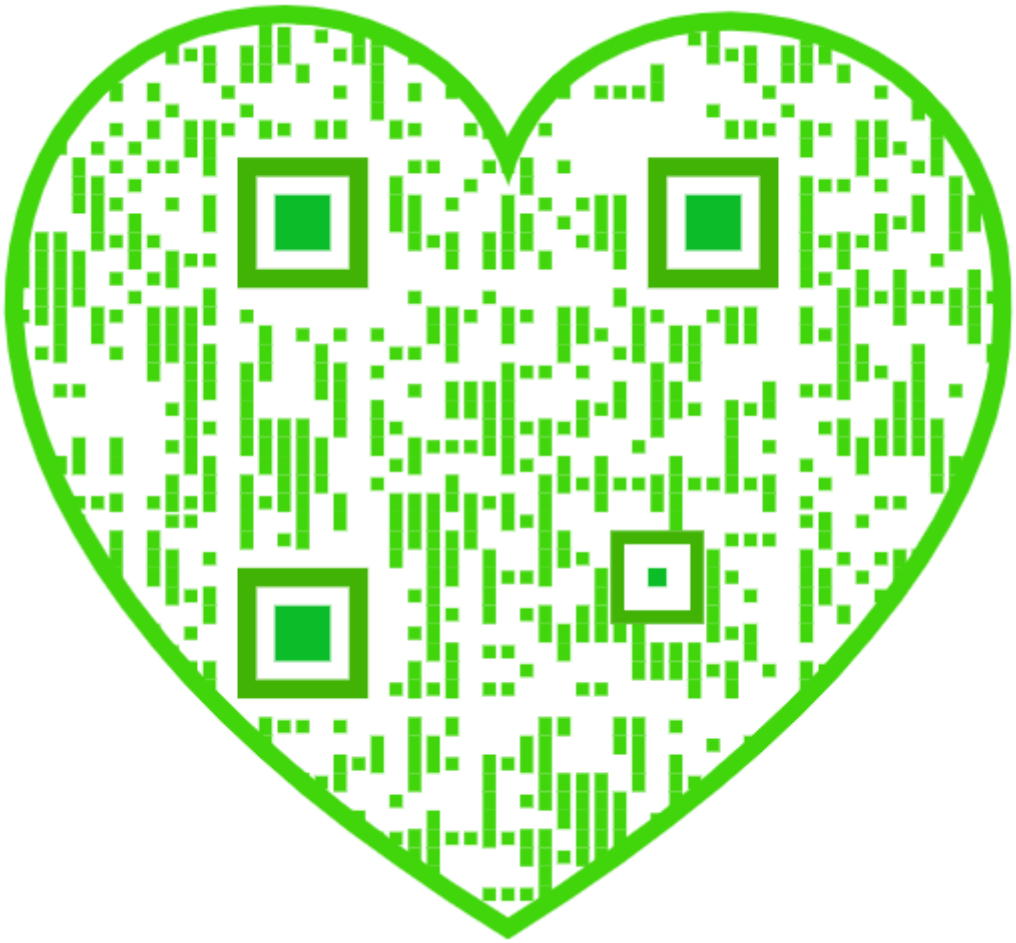

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The Ultimate Standard of Value.

BY

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VIENNA.

A PAPER SUBMITTED TO THE AMERICAN ACADEMY OF POLITICAL AND SOCIAL SCIENCE

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The Ultimate Standard of Value.

There are certain unsettled questions in economic theory that have been handed down as a sort of legacy from one generation to another. The discussion of these questions is revived twenty or it may be a hundred times in the course of a decade, and each time the disputants exhaust their intellectual resources in the endeavor to impress their views upon their contemporaries. Not unfrequently the discussion is carried far beyond the limits of weariness and satiety, so that it may well be regarded as an offence against good taste to again recur to so well-worn a theme. And yet these questions return again and again, like troubled spirits doomed restlessly to wander until the hour of their deliverance shall appear. It may be that since the last discussion of the question we have made some real or fancied discoveries in the science, and some may think that these throw new light upon the old question. Instantly the old strife breaks forth

anew, with the same liveliness as if it possessed the charm of entire novelty, and so it continues year after year, and will continue, until the troubled spirit is at last set free. In this class we find the question—What is the "ultimate standard of value," (*dem letzten Bestimmgrunde des Wertes der Güter*)? The contest over this question began as early as the days of Say and Ricardo. More recently the German, Austrian, Danish and American, English and Italian Economists have taken it up, so that the contest has assumed an international character.

The present generation has indeed some justification for again renewing the discussion. It cannot be denied that of late we have made some important additions to the sum of our knowledge in regard to the theory of value. This at first resulted in an increase in the number of conflicting opinions, but if we are not greatly mistaken, the present phase of this difference in opinion is due to a positive misunderstanding, which stands as a rock of offence in the path of explanation.

I believe that this fatal misunderstanding may now be definitely and finally removed, by an investigation which need possess no other merits than those of care and exactness, and that this will result in permanently advancing the controversy by several paces. In this belief I venture upon a step which otherwise it would be difficult to justify, and propose to add yet another victim to the hecatombs already offered upon the altar of economic theory, though, owing to the necessity of pedantic thoroughness in such an investigation, it is a sacrifice which may not commend itself to some of our readers.

I.

THE PROGRESS AND PRESENT POSITION OF OPINION.

Since the time when Economics first became a science, there have been two rivals for the honor of being considered the "ultimate standard of value," the utility that the goods

afford, and the cost of their attainment. Any tyro who takes up this question of the "value of goods" will invariably start out with the idea that we value goods because, and in the measure that, they are useful to us. He will, therefore, incline to the opinion that the ultimate cause of the value of goods is to be found in their utility. But this naïve opinion is soon disturbed by a thousand practical experiences. It is not the most useful things, as air and water, but the most costly things that show the highest value. Again, in innumerable instances, it is undoubtedly true that value and price do accommodate themselves to cost of attainment, and so at the very outset the spirit of dissent was introduced into the theory of value, and has remained there until the present day. There was either this divergence of opinion, or a division of the field of value phenomena into two sections, that of utility and that of cost; or, finally, both domain and opinions were divided.

The classical theory of value, as is well known, divided the domain of the phenomena of value. A distinction was drawn between "value in use" and "value in exchange." The "value in use" of goods was thought to rest entirely upon utility, but beyond this passing reference to the domain of utility the classical theory did not trouble itself about value in use. In "value in exchange," a distinction was made between monopoly or scarcity goods on the one hand, and freely reproducible goods on the other. The value of goods of the first class, *e.g.*, wines of rare vintage, statues or pictures by leading artists, rare old coins, patented inventions, was thought to depend upon the demand for them, and this in turn depended upon their utility. The value of goods of the second class was thought to depend upon their cost of production, or, as it has been more accurately stated, since the time of Carey, upon their cost of reproduction. To this, as we know from experience, the value and price of all freely reproducible goods tends, in the long run, to conform.

As we have said, the classical theory does not enter into any discussion of "value in use." It also practically ignores the value of scarcity goods, holding, that instances of such value are few in number and of little importance. The stress was thus thrown upon the value of freely reproducible goods. In this way it came about that "cost" was held to be the "ultimate standard of value." This view did not escape frequent and serious, though for the most part, unsuccessful attacks. Say, MacLeod and many other celebrated or little known writers have, at one time or another, attacked this cost theory of value.

It was urged that things that are not useful do not have value, no matter how high their cost of production or of reproduction may be, and therefore that high cost can only result in high value, when associated with a correspondingly high utility. From this the further conclusion was eagerly drawn, that the correspondence between value and cost, which is not to be denied, does not result from value regulating itself according to cost, but rather from cost regulating itself according to value, since higher costs are only undergone when, from the outset, correspondingly higher values are anticipated.

This line of argument, however, is itself open to serious and very manifest objections. It might be urged that just as there can be no value without utility, no matter how great the cost may be, so there can be no value without cost, no matter how great the utility may be. This is manifest in the familiar instances of air and water. The adherents of the cost theory had so much of direct experience in their favor, confirmed as this was by the undeniable interdependence of cost and value, that they for a long time had the advantage in this constantly recurring strife.

A remarkable shifting of the scene was brought about by the appearance of the theory of marginal utility. The main points in this theory I may safely assume to be well known. Its corner-stone is the distinction between usefulness

in general, and that very definite and concrete utility, which, under given economic conditions, is dependent upon the control over the particular good whose value is to be determined. According to this theory, value arises as a rule—that there are exceptions is expressly emphasized—from the utility of goods, not however from some abstract and ever-varying usefulness which cannot be definitely measured, but from that use or useful employment (*Nutz Verwendung*), which in a definite concrete case is dependent upon the control over the particular good.

Since of all the possible useful employments to which the good may be put, it is not the most important, but the least important, that a rational being would dispense with first, the determining utility is the smallest or least important utility among all the useful employments to which a good may be put. This determines its value and is called the marginal utility.

This more exact form of the use theory of value meets in a clear and definite way the objection urged against the older "use" theory of value; namely, that free goods, no matter how useful they may be, have no value. The answer is, that since these free goods exist in superabundant quantities, there is for us no utility dependent upon a concrete quantity of the same, as a single glass of water or a single cubic metre of air. Their marginal utility therefore is zero. Again, this theory of marginal utility gives us the basis for a new and vigorous attack upon the cost theory of value. Considered from one point of view, the cost that determines the value of any product represents nothing else than the value of the producers' goods. If now, as we are compelled to do in a scientific investigation, we inquire how we are to determine the value of these producers' goods, we find that this, too, in the last resort is determined by marginal utility. The cost therefore exercises, as it were, only a vice-regency. It cannot be denied that under certain circumstances it governs the value of certain products, but it is itself, at least in

most cases, governed by a still higher ruler, namely, "marginal utility." Cost, therefore, is for the most part merely a province in the general kingdom of utility, and it is to this last that we must concede the position of the universal "ultimate standard of value." This proposition was first placed in opposition to the prevailing classical theory, in a bold and uncompromising way, by Jevons. "Value depends entirely upon utility," this writer emphatically declares in the very beginning of his great work on "The Theory of Political Economy." This proposition has since found even clearer and more exact statement at the hands of the Austrian Economists, nor have we even yet entirely escaped from this newest phase of the old struggle between cost and utility as the ultimate determinants of value. The present contest is notable, not merely for the number and scientific rank of those who are parties to it, among whom may be found many of the ablest economists of all countries, but also because of the extraordinary variety of opinions advanced. Instead of two opposing conceptions, we find a whole series of separate and seemingly unrelated opinions, each of which is held with the greatest persistence.

The most extreme opinion at one end of the series is that which finds statement in Jevons' proposition, that "value depends entirely upon utility." It must, however, be added that while Jevons occasionally gives statement to this proposition in the above sweeping and uncompromising terms, yet the doctrine as expounded by him contains elements which necessarily lead to a limitation of this proposition. The addition of these necessary, though not highly important limitations, gives us the doctrine as taught by the Austrian economists.* They, therefore, stand next to

*This name, given us by our opponents, includes a certain group of theoretic economists. Not all of those included are Austrians, nor does the group include all the Austrian economists. I would also take occasion to remark that when in the following I speak in the name of the Austrian economists, I do not wish that anyone else shall be held responsible for what I may say or for the manner of saying it. Conversely I do not wish to place myself in the position of being responsible for the statements of every member of that group. Again, while I

Jevons in the series of opinions. Their position is that cost does not officiate as the original and ultimate determinant of value, except in a comparatively limited number of unimportant cases.* The great majority of value phenomena are subject to the dominion of utility. This dominion is exercised in some cases directly, but in a still greater number of cases indirectly. When exercised indirectly the value is, of course, first determined by certain costs, but closer analysis shows that these costs are themselves determined by utility.

At the other extreme end of the series, we find the eminent Danish economist, Scharling, who would establish cost (under the title of "difficulties of attainment") as the sole ruler over the entire domain of value; over value in use, as well as over value in exchange; over the value of freely reproducible goods, as well as over the value of scarcity goods.†

Quite close to Scharling, who is a very pronounced opponent of the theory of marginal utility, we find the acute American thinker, J. B. Clark, who is a no less decided adherent of that theory. This illustrates how strangely confused the controversy has become. Clark also makes cost the general and ultimate "standard of value," though in a different sense from Scharling. According to Clark, the final and determining condition is the amount of personal fatigue, pain or disutility which is imposed upon the laborer by the last and most fatiguing increment of his day's work.‡

have given statement to certain general doctrines of the Austrian economists, yet I would expressly state that the kernel of the doctrine does not belong to me, but is, to a large degree, the outcome of the investigations of my able colleagues, especially Menger and Wieser.

*Wieser's "*Ursprung und Hauptgesetze des Wirtschaftlichen Wertes*," Wien, 1884, p. 104. Then my "*Grundzüge der Theorie des Wirthshaftlichen Güterwertes*, in Conrad's *Jahrbücher für Nat-Oek.* N. F. B. XIII, 1886, p. 42. Then my article, "*Wert*," in Conrad-Lexischen *Handwörterbuch der Staatswissenschaften.*

†Essay on the "*Werttheorien und Wertgesetze*," in Conrad's *Jahrbücher*, N. F. B. XVI.

‡"Ultimate Standard of Value," *Yale Review*, November, 1892.

Somewhat nearer the middle of our series, though still not far from the cost end, we find those writers who, with certain modifications, uphold the old classical theory. It is here that we find the learned and contentious Dietzel,* of Bonn, who so divides the field of value that the value of scarcity goods is determined by utility, while the value of freely reproducible goods is determined by the cost. His position differs from the classical theory, in that he divides the domain of value in use between utility and cost, in the same way that he divides the domain of value in exchange. The classical theory, on the other hand, puts the use value entirely under the dominion of utility. Quite close to Dietzel, we find the Italian economist, Achille Loria, and the able American defender of the classical school, Professor Macvane. The latter has recently attacked the position of the Austrian economists, in two polemical papers of great acuteness. His interpretation of the Austrian theory, however, is not always accurate, nor always free from polemic exaggeration. His chief objection is that their conception of cost as "a sum of producer's goods possessing value" is obsolete and untenable. He holds that the only genuine economic cost of production is labor and abstinence (more correctly, waiting), which, in the case of freely reproducible goods, are the final and entirely independent regulators of value.†

Where opinions vary so widely from one another, some one is usually found who will take a middle course, hoping to find a solution for the problem in the golden mean. This mission of conciliation has been undertaken in this case by no less eminent economists than Professor Marshall, of

* *Die Classiche Wertheorie und die Theorie vom Grenznutzin*," Conrad's *Jahrbücher*. "*Zur classichen Wert und Preistheorie*," N. F., Vol. 20, in the same *Jahrbücher*, third edition, Bd. 1.

† "Böhm-Bawerk on Value and Wages," in the *Quarterly Journal of Economics*, October, 1890; also "Marginal Utility and Value," in the same journal, April, 1893. Near the completion of the present paper, a third paper by Professor Macvane came to hand, "The Austrian Theory of Value," ANNALS OF THE AMERICAN ACADEMY, November, 1893.

Cambridge,* and Professor Edgeworth, of Oxford.† Both of these writers incline toward the theory of marginal utility, but have perched themselves very nicely upon the middle round of the ladder, from which vantage-ground they send forth gentle blame and conciliating applause to both parties in the discussion. Jevons and the Austrian economists are censured for exaggerating the importance of marginal utility, while the adherents of the classical theory are taken to task for underrating its importance; the truth, they say, lies in the middle. Scarcity goods, without doubt, have their value determined entirely by utility. In the case of freely reproducible goods the demand is governed by utility, and the supply by cost; since the price is determined by the interaction of these two factors, one cannot say either that utility alone or that cost alone determines value; but rather that utility and cost co-operate with each other in the determination of price, like, to use Professor Marshall's figure, the two blades of a pair of shears.‡

Criminal lawyers of long experience are wont to apply to obscure and complicated cases the motto: *Cherchez la femme!*

For my own part, when, in our science, I find many clear and able thinkers at odds about a given point, I usually ask myself, where is the ambiguous or elusive concept with which

*"Principles of Economics," London, 1890 (second edition, 1891), and "Elements of Economics of Industry," London, 1892, *passim*.

†A very able criticism of my "Positive Theory of Capital," in the *Economic Journal*, June, 1892, page 328. Also in the same number a criticism of Smart's "Introduction to the Theory of Value," by the same writer.

‡Among other noteworthy contributions to the discussion of this theme I would mention Patten's "Theory of Dynamic Economics," 1892; also a paper by the same writer in a recent number of the ANNALS OF THE AMERICAN ACADEMY on "Cost and Expense." Patten takes a position which in the main is not far from that of the Austrian economists. His point of view is, however, peculiar, in that he throws special emphasis upon the influence of consumption upon the value of goods. This is a special theme which lies outside of the province of this paper. It still remains to notice the work of Irving Fisher ("Mathematical Investigations in the Theory of Value and Prices"), Connecticut Academy, 1892; also a very able work of Benini ("*Il valore e la sua attribuzione ai beni strumentali*"), Bari, 1893. The views of the Austrian economists have found very able and, because of many original features, very interesting statement, at the hands of W. Smart ("Introduction to the Theory of Value," London, 1891).

they are playing. In this case we need not search far afield; it is the concept of "cost."

II.

THE VARIOUS MEANINGS OF THE WORD "COST."

The term "cost," like many of the other terms employed in political economy, is used, both in scientific discussions and in practical life, in several different senses. Even when in a general way we agree in saying that the "cost of production of a good is the sum of the sacrifices involved in the creation of the good, this, by no means, guarantees that we all have the same thing in mind. In the estimation of these sacrifices, we may employ several different methods of measurement. These give us results which, under certain circumstances, will differ not merely with reference to the terms employed, but also with reference to the phenomena indicated by these terms.

First of all, we may distinguish between what might be called the "synchronous" and the "historical" methods of estimating sacrifices. According to the former, we take a unit of the total sacrifices as the basis for our reckoning, a unit which contains an increment of all the forms of sacrifices, which, at any instant, must enter into the production of the commodity. In the production of cloth, for instance, we consume at the same time, yarn, looms (wear and tear), the labor of weavers, coal, etc., besides a great many subordinate aids to production. By this method we usually arrive at a very extensive list of production sacrifices. In order to obtain a single expression for this aggregate, or for the height of the cost, we must bring these various elements in production under a common denominator. This may be done by estimating them all according to their value or price. Hence, by this synchronous method of reckoning, the cost equals the aggregate of the means of production, that have been sacrificed in the creation of the commodities, estimated according to their value.

This is undoubtedly the sense in which the term cost is understood in practical business life. It is in this way, that the manufacturer, the farmer and the merchant reckon their cost. This, too, is the sense in which Professor Marshall employs the term when he speaks of the "money cost of production,"* and in my own writings about value and capital, I usually employ the term cost in the same way. Usually but not always, because for certain purposes another mode of estimating sacrifices, becomes important and may not be neglected. This is the historical method. It is quite manifest that many of the concrete forms of goods, which we to-day are compelled to sacrifice to purposes of production, are themselves the product of past and more original sacrifices. For example, the wood and coal that we consume to-day in the production of cloth, and likewise the machine which we wear out, are themselves the product of previous sacrifices of labor. If we go behind these material commodities to the sacrifices which the human race has suffered in successive periods of time, in bringing them into existence, or if you like the sacrifices necessary to reproduce them, the list of the historical production sacrifices would be greatly simplified. It would include two, or at most three, elements. First of all comes *labor*, which without doubt is the most important of these elements. Then comes a second to which many economists have given the name, *abstinence*. Perhaps a third might be added, namely, *valuable original natural power;* though many might decline to regard this last as a sacrifice.

For our present purpose, the extension of the discussion to the last two elements, about which there may be some question, is not at all necessary. We may indeed leave them entirely out of the discussion, and take the most important of the above elements—labor—as the representative of the elementary production sacrifices. Of course we do not mean

* "Elements" vol. i, p. 214. Compare especially the enumeration of the elements of cost on p. 217.

that we would either deny or overlook the co-operation of the other elements; but, in the question which here interests us, these elements play a part in no way different from that played by labor, so that the result obtained for the latter may in a general way be regarded as true of the other elementary production sacrifices. It is therefore hardly necessary to repeat the same argument for the other elements.

As I have already remarked, the historical mode of viewing cost is regarded by Professor Macvane as the only correct method;* whether or not he is right we have yet to inquire. It is employed by Professor Marshall in the statement of his conception, of "the real cost of production."† In numerous instances I also have had occasion to make use of it, as when I endeavor to show that capital does not possess original productive power. Again, when in explaining the operation of the law of cost,‡ say in the iron industry, I declare in a brief way, that the necessary means of production are mines, direct, and indirect labor.§

According to this historical method of reckoning cost, labor may be regarded as the chief representative of all production costs. But the sacrifice arising from the expenditure of labor may itself be measured by different standards or scales. We can measure it either according to the amount of the labor (*i. e.*, the duration of the labor), according to the value of the labor, or, finally according to the amount of the pain or disutility, which is associated with the labor.

*In his paper, "Böhm-Bawerk on Value and Wages," pages 27 and 28, and more recently in his paper on "The Austrian Theory of Value," page 14. In order to avoid any possible misunderstanding that might result from a difference in the use of the term "historical cost" by Professor Macvane ("Marginal Utility," page 262), I would expressly state, that I apply the term "historical" as antithetical to "synchronous." I therefore include under this term not only that cost of production, which has actually been expended in the past, but also the cost of reproduction, in so far as this "historical" may be resolved into the single state of primary productive power, which must in successive periods of time be applied or expended.

†"Elements," page 214. "The exertions of all the different kinds of labor that are directly or indirectly involved in making it, together with the abstinences or rather the waitings required for saving the capital used in making it: all these efforts and sacrifices together will be called its real cost of production."

‡"Positive Theory of Capital," page 95 of English edition.

§*Ibid.* page 229 of English edition.

Obviously, through the use of these different standards of measurements, one will arrive at very different formulas for expressing the amount of the costs. If, for instance, one were asked: What is the cost of production of a certain piece of cloth? he would answer according to the first scale or standard, twenty days' labor; according to the second (if a day's labor cost say eighty cents), labor to the value of sixteen dollars, and according to the third, a certain sum of pain or disutility, which the laborer must endure.

But it is important that we should here see clearly, that this involves more than a mere difference in the terms employed. For according as we employ one or the other of these scales or standards, our estimates of the actual amount of the cost of any commodity will vary. They will not only be different, but may even positively contradict each other. Suppose, for instance, that a certain commodity A requires for its production twenty days' labor, which is paid for at the rate of eighty cents per day; again let us assume that a certain other commodity, B, requires thirty days' labor, which is paid for at the rate of forty cents per day. Now if we employed the first scale or standard, we would reach the conclusion that the cost of A was less than the cost of B, (twenty against thirty days' labor). By the application of the second, we reach the directly opposite conclusion, that the cost of A is greater than the cost of B (labor to the value of sixteen dollars against labor to the value of twelve dollars). It is also clear that even though we assume that the labor in these cases is equal, either in amount or in value, this does not necessitate the conclusion that the amounts of pain or disutility are equal. The labor of a great artist, which perhaps is paid the highest of any form of labor, may not only not cause him any pain, but may even yield him, quite independent of all economical considerations, a large measure of pleasure. It might therefore very readily happen that by the application of the third standard, the cost of a commodity would seem very small, while its cost, according

to the other two standards, would seem very large, and conversely.

This short resumé of the uses that have been made of the term "cost of production" makes it clear, that if we would avoid idle disputation, all further discussion of this subject must be preceded by the consideration of a preliminary question. A question which, for the most part, has been neglected by those who have taken part in the general discussion. The whole controversy, in its final issue, turns upon the famous "law of cost," which holds that the value of the majority of goods, namely, those which may be regarded as freely reproducible, adjusts itself in the long run according to the cost of production. As to the actual manifestation of such a law, there can be no question. Its existence is empirically proven, and so far as the actual fact is concerned is unanimously acknowledged by all parties to the discussion. The real question is as to the deeper meaning, the final theoretical conclusions, which may be deduced from this empirically established law of cost. But before we can enter upon any inquiry in regard to this deeper meaning, we must first know in what sense the term "cost" is to be employed.

That it cannot at one and the same time, have all of the above enumerated meanings, the preceding examples make very manifest. If the cost of a commodity A, taken in one sense is higher, and taken in another sense is lower, than the cost of a commodity B, it is manifest that the price cannot, at one and the same time, be adjusted in both senses according to the cost. In that event the price of the commodity A would at one and the same time be higher and lower than the price of the commodity B. Our most pressing problem, therefore, is to find a solution for that preliminary question, to which we have referred, a question which finds statement in the title of the following chapter.

III.

FOR WHICH OF THE DIFFERENT MEANINGS OF THE WORD "COST" IS IT REALLY TRUE THAT, ACCORDING TO THE EXPERIENCE OF INDUSTRIAL LIFE, PRICES ADJUST THEMSELVES ACCORDING TO COST.

It is undoubtedly true for the value sum of the synchronously reckoned cost; or for what Professor Marshall calls the "money cost of production." This is the cost from which, in practical life, the "law of cost" receives its most direct and effective confirmation. The action of the merchant is determined by the amount which he must expend for all the necessaries of production. If the price of the ware is not sufficient to cover this outlay, he ceases to bring the ware to market; conversely, if the price yields a fair surplus over and above this outlay, the producers increase the supply until the price, in the above sense, is adjusted according to the cost. It is therefore, from the standpoint of the practical man's estimate of the money cost of production, that the "law of cost" is always demonstrated. Even such writers as Professor Marshall have recourse in the first instance, to this method of proof.*

We do not mean to say that this "law of cost" is only true for the synchronous method of reckoning money cost. On the contrary, it is in a certain sense applicable also to the historically reckoned cost; and it is this extension of it which, since the time of Adam Smith, has excited the greatest interest among writers on the theory of value. The only question is, to which of the different conceptions that are included under the historical method of reckoning cost may this be applied.

There is no doubt that it is true—in that approximate way in which any "law of cost" can be true—of the primary elements of cost, labor and abstinence, measured according

* For instance, "Elements," page 222, "the normal level about which the market price fluctuates will be this definite and fixed (money) cost of production." Compare also the explanation of "equilibrium," on page 219.

to their value. We might put this in a more concrete form as follows:

In those goods that generally obey the "law of cost," the price of the finished product tends to an approximate equality with the total sum, that must be expended in wages and interest during the whole course of its production.

This proposition, I believe, is common to all theories of value including the classical (see A. Smith and J. S. Mill), and really follows as a logical consequence from the older theories. We have said that the price, say of cloth, tends to adjust itself to the money cost of producing cloth. This consists in part of the wages and interest, which are paid directly in this industry (the wages of weavers); also, in part, of the money expended for the consumption and durable goods sacrificed in its production, for instance, the yarn consumed. But here again, the money price of yarn, according to our proposition, would tend to adjust itself to the spinner's money cost. This again consists, in part, of interest and wages of spinners, and in part, of the money expended upon consumption and durable goods, say the wool consumed.

It is manifest that the analysis may be continued in this way until finally the money cost of every single stage of production is resolved into interest and wages. In so far as the prices of the finished product or of the intermediate products (cloth, yarn, wool, etc.), actually conform to their money cost of production, they cannot fail, in the end, to coincide with the total sum of the interest and wages expended in their production. Or what is the same thing, they will agree with the total outlay of the original elements of production—labor and abstinence—rated according to their value or price.

The primary outlay in production, especially the labor, to whose consideration we will, for the sake of brevity, confine ourselves, can, as we know, be measured by other scales or standards.

If we attempt to verify the law of cost, with reference to these other methods of measuring costs, we soon come to grief.

It is very clear, for example, that the "law of cost," in the sense that the price tends to conform to the quantity or duration of the labor expended, will not hold good. To prove this, we need only advert to the simple fact that the product of a day's labor of a machinist or cabinetmaker is much higher in value than the product of a day's labor of an ordinary ditch-digger. This holds good, not only for the difference between skilled and unskilled labor, but also for the less pronounced differences that exist between the various groups or grades of common labor. The well-known doctrine of the socialists, which bases all value upon the quantity of labor expended, must either do violence to the facts or be untrue to itself; and this entirely independent of the fact that it ignores the cost element—abstinence. When, for example, Marx concedes that skilled labor must be translated into terms of common average labor, and so, for the purposes of estimating cost, must be regarded as some multiple of this common average labor, he is only verbally faithful to the proposition that the duration of labor is the true measure of cost. As a matter of fact, he makes, the *value* of the labor expended the measure of the cost.

Our investigation becomes far more difficult when we come to consider the fourth of the above enumerated meanings of the word cost; this meaning understands by the word cost, the sum of the pains or disutilities which the laborer must endure in production. This brings us to the cardinal point of the whole question, a point, however, which requires the most careful investigation.

It is quite conceivable that the correspondence which we have already noted between the value of freely reproducible goods and their synchronously reckoned cost, and again between that value and the value of the labor expended, may extend to a third member. In this case the law of cost

would be true in a threefold sense. To establish this it would be only necessary to show, that the value of the labor corresponds with reasonable accuracy to the amount of pain that the laborer endures.

Such a correspondence actually occurs under a certain definite assumption. This assumption depends upon the facts, first, that the pain of labor increases with its duration, and second, that the labor is continued until the pain of the last increment of labor (*Arbeitstheilchen*), say the last quarter of an hour, is in exact equilibrium with the marginal utility of the product of that final increment of labor. In this event we have here a common rendezvous for our several items—the utility of the product, the pain endured by the laborer, the value of the labor, and finally the value of the product.

Let us illustrate this by an example. We will take a man engaged in one of the ordinary trades, say a cabinetmaker or a locksmith. A certain amount of money, say five cents, which he obtains for a quarter of an hour's labor, has for him a definite value. This is determined by its marginal utility, or by the importance of the last need which he is in a position to satisfy through the outlay of five cents. Now, according to well-known principles, about which my English and American colleagues and myself are in entire agreement,* this marginal utility will be smaller, as the daily pay of the laborer increases. It will, for instance, be smaller when the laborer receives two dollars and forty cents for twelve hours of work, than when he receives one dollar and

* The very nature of my problem specially compels me to seek some settlement or agreement with the representatives of English and American science. Partly because their rival opinions touch most nearly the salient points of the controversy; partly because they already, in consequence of the great weight of scientific authority which they have upon their side, and of the exceptionally able representatives which they have found, are in advance of all others. Besides, I have elsewhere taken occasion to refer to some of the others whose opinions bear upon this point. I referred to Scharling's theory in my "Theory of Capital," p. 160, English edition; to Dietzel in two papers, "*Zwischenwort zur Werttheorie*," and "*Wert, Kosten und Grenznutzen*," in Conrad's *Jahrbücher*, N.F., vol. xxi, and third edition, vol. iii.

sixty cents for eight hours of work. Again, according to equally well-known principles, about which there is a no less complete agreement among all parties to the controversy, the fatigue and strain of the laborer grows with the increase in the duration of labor. Other things being equal, the tenth hour of labor is unquestionably more fatiguing than the third or sixth, and a fourteenth or an eighteenth would certainly be still more fatiguing. Now, since the marginal utility of every five cents added to the pay of the laborer is less than the utility of the last preceding five cents, and since with each additional quarter of an hour of labor the pain increases, there must come a point where the two will meet or be in equilibrium with each other. It is also undoubtedly true that when the laborer is entirely free to determine the length of his labor day, he will continue his labor until this point of equilibrium is reached. He will work nine and one-half hours when and because to his mind five cents is just sufficient indemnification for the disutility of the thirty-eighth quarter-hour of labor, but not sufficient for the somewhat greater disutility of the thirty-ninth quarter hour.

This point of equilibrium will, of course, vary for different laborers. A laborer, for instance, who must provide for a large family, and to whom the addition of five cents means the satisfaction of a quite important want, will be inclined to work longer, as will also a strong, vigorous laborer, who feels less fatigue from this labor. On the other hand, the sickly or lazy laborer, or the one who has fewer, or less pressing wants, will stop at an earlier point. He will prefer a longer period of leisure to the increased amount of wages, which he would have obtained had he continued to work.

It is just as manifest that, other things being equal, the point of equilibrium will vary for one and the same laborer, according to the amount of the wage which he will receive for the additional quarter hour. A laborer who would work thirty-eight quarter hours, for five cents per quarter hour, would perhaps work forty-two quarter hours, if he could

obtain seven and a half cents per quarter hour, while if he received only two and a half cents, he might only work thirty quarter hours.* Or the number of hours of labor and the degree of fatigue, which the laborer will endure, will vary with the rate of wages.

Upon what then, under the above assumption, will the rate of wages (in other words the value of the labor) and the value of the created products depend? For the simple conditions of a Robinson Crusoe this question is already answered. The value of the goods produced, which for a Crusoe have no price, but merely a subjective value, will equal their marginal utilities to him. Since the product constitutes his wages or the recompense for his labor, the rate of wages or the value of his labor is identical with the value of the product.

Finally, Crusoe, as a reasonable being, will continue his labor to that quarter of an hour, the disutility of which will be exactly counterbalanced by the utility of the goods produced in this quarter of an hour. All four of the items which we have been considering would then be equal. Value of product—value of labor—marginal utility—pain of labor. If it is asked: What, in this case, are the factors that determine the value of the product? We must reply that "utility" and "disutility" are here of equal importance. The utility of the goods produced and the pain of the labor undergone. This point of equilibrium by which the marginal utility, and therefore the value, is determined, is in reality the marginal point for both utility and disutility. We might therefore, in this case, say with Professor Marshall,

* I would not maintain that low wages must always result in a sinking of the point of equilibrium. It may very readily happen, that with very low wages the necessities of the laborer and so the marginal utility of the unit of money, which he receives, is so great that he is compelled, even to satisfy the most pressing wants, to endure long hours of labor. This occurs with us in the case of the miserably paid sewing women, who not unfrequently work from fourteen to fifteen hours a day. But, as a rule, and especially where the payment of wages is so arranged that the overtime is paid for as a separate item from the regular time, the advance in wages will result in an increase in the supply of labor. This is always under the assumption that the laborer is free to determine how long he will work.

that, in the determination of value, utility and disutility, or pleasure and pain, work together like the two blades of a pair of shears.

Though essentially the same thing, the matter takes a somewhat more complicated form, when we turn to the consideration of a laborer in our actual economic world; still assuming of course that the laborer is free to continue, or to terminate his labor when he pleases. Here also, the value of the product will equal the value or wages of labor. This will be true, even though the laborer does not receive his reward directly in the form of the created product, but receives a certain money consideration, in lieu of his share of the product. When competition has done its work, and forced the value of the product down, until it equals its cost, then the wages which the entrepreneur has paid out either directly or indirectly, must equal the value of the product, (we here ignore all payments for abstinence). How high will the value of both product and labor go? We would again answer, to the point at which marginal utility and marginal disutility coincide. Here, however, a new element enters into the problem. We have to consider, not only the marginal utility which the wages have for the laborer, but also the marginal utility which the product of labor has for the general public or for the consumer.

Every consumer continues to buy so long as the marginal utility of the ware exceeds the price sacrifice. Since the marginal utility decreases as the supply increases, an increase in the amount produced cannot find a market except at a lower price. When, for instance, thirty million pieces of a product, each of which cost one-quarter hour's labor, will find purchasers at a price of seven and one-half cents; thirty-five million pieces will perhaps bring only six cents each; thirty-eight million only five cents; forty-two million only four cents, while fifty million might only find buyers at two or at one and one-half cents. On the other hand, the amount that will be produced will depend, *ceteris paribus*, upon

the length of the working day. But this again, as we have seen, depends in part upon the rate of wages, or upon the amount which the laborer will receive for an additional quarter hour of work. With a wage of two and one-half cents per quarter hour, every worker, according to the figures of a previous example, would be willing to work thirty quarter hours per day: with a wage of five cents per quarter hour, they would work thirty-eight quarter hours; with a wage of seven and one-half cents per quarter hour, they would work forty-two quarter hours. If the number of workers be taken as a million, then with a wage of two and one-half cents per quarter hour, they will produce thirty million pieces; with a wage of five cents, thirty-eight million, and with a wage of seven and one-half cents, they will produce forty-two million pieces of a product of which each piece costs one-quarter hour of labor. It is manifest that under these conditions supply and demand will be in equilibrium when we have a product of thirty-eight million pieces with a value of product, and a wage of labor equal to five cents. This would be the price of the commodity and the level of wages at which demand and supply would come into equilibrium. All those who desire to purchase at that price would be satisfied, and, at the same time, the price would afford sufficient indemnification for the pain endured by just the right number of workmen. It must not, however, be forgotten that in the fixing of this level the utility of the ware is just as important a factor as the disutility of the labor, or that in the determination of this level they work together like the two blades of a pair of shears.

Here, however, my English and American colleagues and myself must part company. They seem to regard this rule as capable of quite general application.* They even seem

* Professor J. B. Clark, in his paper on the "Ultimate Standard of Value," has set forth with great clearness and elegance, nearly the same thought which I have employed in the text. He certainly draws from it a conclusion which I am no more prepared to accept than his brilliant statement of a part of their premises.

disposed to hold that it is the great law itself. I hold, on the other hand, that this rule has no wider application than is justified by the assumption upon which it is based; namely, that the laborer is entirely free to determine how long he will continue his daily labor. When, however, we turn to the actual facts of our present industrial life, we find first that this assumption does not obtain, save as an exception, and that it does not correspond at all with the other assumptions upon which our empirical law of cost is based.

IV.

THE RELATION OF THE "LAW OF COST" TO DISUTILITY CONTINUED.

To demonstrate the first of the two propositions with which I closed the preceding chapter, I need only advert to well-known facts. It is, for instance, a fact of common experience, that in most branches of production the laborer is not free to determine the length of his working day. The hours of labor are fixed more or less by custom or law. This is true in factory and workshop, as well as in agriculture. In some countries it is the eleven-hour day, in others the ten-hour day, that prevails. If the present labor agitation should be at all successful, we may see the eight-hour day quite generally adopted. In any event, the amount of the pain of labor is more or less fixed. When changes occur in the rate of wages or in the value of the product, the laborer is not free to make a corresponding change in the length of his working day, and thus restore the equilibrium between utility and disutility. If the ten-hour day prevails, we cannot say that with a wage of seven and one-half cents per quarter hour, a million laborers will work forty-two million quarter hours, and hence that forty-two million pieces of commodity will be produced, while with a wage of five cents, they will labor thirty-eight million quarter hours, and produce thirty-eight million pieces of commodity. But whether

the wage was five or seven and one-half cents, they would, in all probability, work forty million quarter hours and produce forty million pieces of commodity. In this way the equilibrium, in the case of the individual laborer, between the wages and the disutility of labor is disturbed. With many the disutility of the last quarter hour of labor will be less than the utility of the wage received, while for others it will be in excess of the same, *i. e.*, the laborer in this last instance, will find that the disutility of the last quarter hour of labor (or it may well be of several of the last quarter hours) is greater than the utility of the wage that he receives for it, and this whether the rate of pay is five or seven and one-half cents per quarter hour. If he were free to determine the length of his working day, he would, of course, work that many quarter hours less. But, as a matter of fact, he is not free to do this. He must either work the regular ten hours or not work at all. He naturally chooses the former, because the total utility of his entire wage (which means for him protection from hunger, etc.), is undoubtedly greater than the total disutility of the entire ten hours of labor.

In this way the disutility of the labor fails to operate as a correct measure, either for the amount of the labor supply or for the quantity of the product. It also fails in the same way as a correct measure for the height of wages and the value of the product. In so far as free competition may prevail in the determination of cost, the value of the product will vary with the wages paid, but it will not vary with the disutility of the labor. A careful examination of the actual facts of life will show that the influence of this disutility or pain of labor only appears in the following special cases:

(*a*) In the case of those goods that are produced outside of the time devoted to the regular occupation. An instance of this may be found in the making or repairing of tools during leisure time, these tools being intended, not for sale, but for home use. Their cost is the pain or disutility of the

labor devoted to them, and they will be valued according to the amount of this disutility.

(*b*) This is also true in the case of some regular occupations, in which men produce on their own account as artists and authors. It is also true in the case of industries carried on at home, where men are free to continue or to stop working as they may themselves determine. That the degree of their fatigue will exert an influence upon this determination may be granted.

(*c*) This is likewise true in those industries in which men voluntarily work overtime and receive special payment for the same. But such overtime is neither general nor fixed. It is a more or less temporary and exceptional arrangement, which only continues during the period of special pressure. Therefore the influence of this case upon the supply of labor and the value of the product is neither deep nor lasting.

(*d*) Differences in agreeableness or disagreeableness of the various occupations will (unless offset by other conditions) tend to give rise to differences in the rate of wages. Those which involve less than the average laboriousness or unpleasantness, or which have associated with them certain advantages or perquisites will yield a less than normal wage. Occupations of more than the average laboriousness or unpleasantness will, on the other hand, yield a more than normal wage. I must, however, expressly declare, that in these cases the absolute amount of the pain of labor does not determine the absolute amount of the wages. Differences in the disutility or pain of labor can only give rise to variations from a normal wage, and as we shall take occasion to show, this normal wage is determined by an entirely different set of conditions.

The influence of the laboriousness or disagreeableness of the labor is often greatly modified and in some instances is entirely offset by opposite tendencies. In Professor Marshall's "evil paradox" * we have one of the earliest

* "Elements," page 275.

recognized facts of our economic experience. This is the fact that unpleasant occupations, unless they demand some rare quality, usually bring in a wage that is not only no higher, but is ofttimes lower, than that paid in more pleasant occupations.

(*e*) Under normal wage I include the wage in all those occupations that do not require any rare or exceptional qualities. This, of course, includes the great mass of all occupations. With this understood, it becomes clear that the disutility of labor has but an indirect, and in one sense crude influence upon the absolute height of the normal wage. It undoubtedly prevents the introduction of an eighteen-hour labor day or even of a fifteen-hour day, but it has not been able to prevent the introduction of a thirteen or fourteen-hour day, as is shown by the history of the condition of the laboring classes. No one would claim that the progress of humanity from a thirteen to an eight-hour labor day has corresponded step for step with a similar progressive movement in the subjective feelings of the laborer. Nor will any one claim that the laborer will find in his wages an exact equivalent or recompense for the pain or disutility of his labor when he works thirteen hours per day. Again, when he works twelve hours per day, and so on for eleven, ten, nine and finally for eight hours per day. It is no nice variation in the point of equilibrium between utility and disutility that determines the length of the working day. It is the changing of the relative strengths of the various social factors that plays the principal part in this determination. This, within certain limits, which we cannot here stop to discuss, it will probably continue to do in the future.

(*f*) Finally the absolute height of the wages of skilled labor is manifestly still more independent of the disutility or pain of such labor. I take it that no economist would urge that this is the element which finally determines the salary of the higher officials, great actors or singers, specially skilled workmen, managers of factories, lawyers, doctors, etc.

These various points taken together certainly justify the assertion made above, viz., that the actual conditions which make possible an equilibrium of wages and pain, or of value and pain (so far as the value of the product is dependent upon the height of the wages), do not obtain in our industrial life. On the contrary, these conditions are only found in a relatively limited number of unimportant and exceptional cases.

This alone would be sufficient to show that in tracing the influence of disutility upon the value of goods, we have quite a different and indeed much narrower trail to follow, than that which leads to the great empirical law of cost. This may be shown in the clearest and most convincing way from several different standpoints, and with this we are brought to the second proposition advanced at the end of the preceding section. First, it may be shown that in many instances the correspondence of the value of goods with their cost, in the sense of the great empirical law of cost, not only does not imply that the value of the goods corresponds to the disutility or pain of labor, but actually excludes this assumption. Excludes it not merely by chance or temporarily, but of necessity and permanently.

In order to avoid needless repetition, we will take an example that is sufficiently comprehensive to include nearly all possible cases. In the production of nearly all wares there comes into play, besides the commoner sorts of labor, some better paid skilled labor. In the making of a common cloth coat, we will have the labor of some skilled cutter, or of a manager with a higher standard of life. Again, in the weaving of the cloth, we find the better paid labor of factory bookkeeper, manager, etc. If we go back to still earlier stages—the manufacture of the machines or looms, the mining or preparation of the steel, etc.—it is clear that the better paid labor of the engineer, foreman and manager will enter into the cost.

Let us now assume that the production of a cloth coat, including all stages, costs three days of common labor at

eighty cents and one day of skilled labor at one dollar and sixty cents. Let us also assume, for the sake of the argument, that the wage of eighty cents is an exact equivalent or recompense for the pain of a day's labor. If the amount of this pain of labor is to figure as the regulator of price, then under the above assumptions, the price of the coat should not exceed three dollars and twenty cents, for the skilled labor of the engineer or bookkeeper is not more painful than that of the common miner or tailor. Hence, if we take the pain as the standard, we cannot reckon the former as greater than the latter. And yet we all know that under the above assumptions, a cloth coat could not, for any long time, be put upon the market for less than four dollars (not including interest). This is manifestly out of proportion with the disutility of the labor. And yet, according to the law of cost, the price of the coat in the long run, and under conditions of free competition, should tend or gravitate toward this disutility.*

The lack of agreement of the cost, in the sense of the classical law of cost, with the disutility of labor, may be shown by approaching the question from an entirely different point of view. This brings us to an interesting counter test, which, if I am not greatly mistaken, has hitherto entirely escaped the attention of Economists.

We have occasionally remarked that the wages of skilled laborers, as a rule, are determined upon other grounds than the amount of pain which these persons endure. In particular

*We might compare the coat that cost three days of common labor at eighty cents and one day of skilled labor at one dollar and sixty cents with another coat that cost four days of common labor at eighty cents. If the law of cost is interpreted as meaning the sum of the pain or disutility endured, then these coats should have about the same value. It is manifest, however, that the fulfilling of the law of cost actually demands the opposite of this: that the coats should exchange in the ratio of ten to eight. The empirical law of cost is by no means the same thing as the regulation of price through the disutility of labor, and cannot be so. Or as Professor Green says in a paper on "Pain Cost and Opportunity Cost," "We shall certainly find that the rule of equal values for equal pains is not the law which actually determines exchange ratios."—*Quarterly Journal of Economics*, January, 1894.

cases, it is possible to find a justification for the casuistical assumption which regards utility and disutility as exercising an equal influence, both upon the remuneration of labor and the value of the goods produced. This is just as true as regards the ordinary carpenter or locksmith, as in the case of some famous artist, such as Titian or Van Dyck. In short, it is true of all men who, because of the scarcity of their talents, possess a sort of monopoly in the production of certain goods. How long they will work per day will depend, in part at least, upon the degree of fatigue that they must undergo. This, however, does not give us a fixed limit. How long a great artist will work depends, as in the case of the common laborer, upon several conditions. Among others upon the rate of pay that he can obtain for the product of his more prolonged effort. An artist may not be willing to work overtime to paint a picture, for which he will receive forty dollars. He might, however, not only willingly but gladly prolong his working day if he were offered four thousand dollars for the completed picture.

In short, there is nothing to prevent the producer of a monopoly good from so prolonging his day's labor, and thereby the daily supply of his monopoly ware,* until the marginal utility, of the money received for the last unit of labor time, is in exact equilibrium with the disutility of this last unit of labor time. It cannot be denied that under such circumstances the disutility exercises a determining or co-determining influence upon the amount of the supply, the height of the marginal utility, and the price of the product. This, too, is done in just the same way as in the illustration given in the last chapter, in which the ware was the product of common labor. At the same time, economists are agreed that such monopoly prices do not come under the classic law

* It would be easy to find many other and possibly better examples than that of the artist. In his case the artistic impulse is always strongly opposed to the action of the purely economic motives. Possibly the best example would be an inventor. He is in a position to produce a useful object, without any help from others, and is entirely free to determine the length of his working day.

of cost. Here again, as I believe, we are brought to the conclusion, that the disutility which we are investigating is something different from the cost which is operative in the empirical law of cost, and, therefore, that those economists are on the wrong path who think that the occasional agreement of value and disutility may be explained as a manifestation of the great empirical law of cost, and *vice versa*.

This erroneous confounding of two quite different phenomena has been, as it were, in the air of theoretic economics since the time of Adam Smith. The latter, according to the very apt and ingenious observation of Wieser,* really gives two parallel explanations of the phenomenon of value, viz.: a philosophical explanation, which is especially applicable to primitive conditions; and an empirical explanation, which is better suited to the more fully developed conditions of our present industrial life. Adam Smith also gives us two similarly related explanations of cost. According to the philosophical, he puts the personal pain associated with labor, "the toil and trouble," as the cost which really determines the price of the product. Later, in explaining his famous law of cost, which belongs to the empirical part of his theory of value, he holds that the "natural price" of the product gravitates toward the empirical cost. This, he declares to be wages of labor and interest.† To the mind of Adam Smith, of course, there was no opposition between these two explanations, and accordingly it was impossible to escape the conclusion, that, at least so far as labor is concerned, they really have to do with the same thing. By eliminating the modern economic conditions, as modified by exchange, we get the real kernel of the matter. And this kernel, according to the empirical law of cost, is nothing else than "the toil and trouble" of labor.

The well-known controversy that long monopolized the attention of the classical economists, whether the price of

* "*Der Natürliche Wert*," Wien, 1889, Preface, p. iii.

† "Wealth of Nations," Bk. i., Ch. v. and vii.

goods depends upon the quantity of labor expended, as Ricardo taught, or upon the amount of wages, as Mill correctingly suggested, afforded ample opportunity to correct this error. They failed, however, to do so. The old Smithian "toil and trouble" remained in a sort of scientific haziness, until, through Gossen, and especially through Jevons, it was brought to full and clear recognition. Then, for the first time under the name of the "disutility of labor," it was raised to the rank of an elementary economic power, while its counterpart, the utility of the good, was set over against it. The old confusion, however, attached itself to the new names. If I am not greatly mistaken, not only the followers of the old classical school, but also many of the adherents of the newer theory, developed by Jevons, still stand under this ban.

In the case of Professor Macvane, the confusion is quite pronounced, as when he explains the cost of the classical law of cost as "pain of labor and fatigue of muscles."* Professor Edgeworth takes substantially the same position when he occasionally explains the "disutility" in terms of "cost and sacrifice."† Or when he sets first utility and cost,‡ and again, utility and disutility over against one another.§ Again, when he indulges in a polemic against the Austrian school of economists, and urges that they have neglected the great Ricardian law of cost and stripped it of its significance, and that they have not properly recognized the function of disutility in the determination of the economic equilibrium and the value of goods.|| Professor Marshall, as it seems to me, also becomes involved, to some degree, in this confusion. While Ricardo held that cost of production, and Jevons held that marginal utility was the determinant of value, Marshall holds that both enter

* "Marginal Utility and Value," pp. 262, 269.
† *Economic Journal*, June, 1892, p. 334.
‡ *Ibid.*, p. 335.
§ *Ibid.*, p. 337.
|| *Ibid.*, *passim*, especially p. 334.

into the determination of value, and that, like the two blades of a pair of shears, they are co-equal factors in this determination. Nor does he assume this position in any tentative way, but rather holds that he has found the solution for a problem long in dispute.*

No matter who is responsible for this confounding of the cost of the empirical law of cost with the disutility of labor, the fact remains that the confusion does exist. In order to distinguish as sharply as possible between the two principles referred to, I may remark that there is a rule which may be called the law of disutility, according to which the value of all goods that come under its influence tend to be in equilibrium with the amount of the pain involved in their production. But this is far from being the same as the great empirical law of cost. It depends upon quite different assumptions, and upon the play of other and intermediate motives. Finally, it has a different and much smaller field of operation. On the one side, it includes but a small part of the territory covered by the empirical law of cost, and on the other, it includes a certain portion of territory which is not covered by the law of cost.

This somewhat minute and pedantic, though none the less necessary, examination of the famous law of cost leads us to the following conclusion. The law of cost, as applied to the actual facts of our economic life, is susceptible of verification, in the sense that the synchronously reckoned cost, or the sum of the values of goods expended in production, coincides with the price of the product. Again, under the assumption that this synchronously reckoned cost can all be resolved historically into labor, it is possible to verify the proposition that the price of the product is determined by the sum of the labor expended, measured in terms of the *value* of this labor. But the law of cost is certainly *not* true in the sense that the price of those goods which are within

*"Principles," note on Ricardo's Theory of Cost in Relation to Value, Bk. vi., Ch. vi.

the domain of the law of cost is determined by the amount of the pain involved in their production.

V.

THE LAW OF COST AND THE VALUE OF LABOR.

I would now ask, and my colleagues of the Austrian school ask with me, what advance have we made toward a solution of our problem. Even though it be shown by means of the famous law of cost, that the value of freely reproducible goods may be resolved into the value of their means of production, or into the value of the most ultimate or elementary factor in production, *i. e.*, labor, we still must ask, what progress has been made in explaining the value of goods?

Manifestly this translation of the value of goods into the value of the means of production, does not give us the final solution for our problem, for we must still further inquire, how we are to determine the value of these means of production; or if we regard the means of production as resolvable historically into the labor previously expended, how are we to determine the value of this labor?

Let us proceed immediately to the consideration of the second half of our question. This will bring us at once to the root of the problem. For the sake of clearness I will accept as the basis of the argument the doctrines proposed by those who are in opposition to me in this matter.

In Professor Marshall's most admirable book which may fairly be taken as representative of the present status of economic theory in England, may be found several answers to the question: What determines the value of labor? In one place, he teaches that "free competition tends in the direction of making each man's wages equal to the *net product* of his own labor; by which is meant, the value of the produce which he takes part in producing, after deducting all the other expenses of producing it."* He also holds, that "the

* "Elements," Bk. vi., Ch. ii., § 2, and corresponding place in "Principles."

wages of every class of labor tend to be equal to the net produce due to the additional labor of the marginal laborer of that class. It may be remarked, that in obtaining the value of labor out of the value of the product of labor, one is in entire harmony with the conceptions of the Austrian school. What effect this has upon the law of cost will appear later on in the discussion.

In another place* Professor Marshall gives us quite a different standard for determining the value of labor. He holds, that in the case of every agent of production: "there is a constant tendency toward a position of normal equilibrium, in which the supply of each of these agents shall stand in such a relation to the demand for its services, as to give to those who have provided the supply a sufficient reward for their efforts and sacrifices. If the economic condition of the country remain stationary sufficiently long this tendency would realize itself in such an adjustment of supply to demand, that both machines and human beings would earn generally an amount that corresponds fairly with their cost of production."

I am not quite sure how wide an application Professor Marshall would give to this statement. This much, however, is clear, he would apply the distinction of the classical school, between the rapidly fluctuating "market price" and the "normal value" which is based upon cost, to the commodity—labor. In the passage just cited he manifestly wishes to indicate the standard according to which the normal or long period position of wages is finally determined. But as it appears to me, he is not quite clear whether he would make the efforts and sacrifices of the laborer the ultimate standard (as his expression, "sufficient . . . for their efforts and sacrifices," would seem to indicate), or whether he would take the cost of rearing and maintaining human beings as the standard (as the expression "amount that corresponds fairly with the cost of production of human

* "Elements," Bk. vi., Ch. v, § 4, and corresponding place in "Principles."

beings") would imply. Doubt may also arise whether it is his opinion that the *absolute height of wages* tends to an equilibrium with the "efforts" or "cost of production of human beings," or that the differences in wages to which these give rise are but variations from an average level, the absolute height of wages being determined by other considerations.

If this last is Professor Marshall's opinion, then I am in entire agreement with him in his conception of the value of labor. That differences in the pain of labor tend to bring about corresponding differences in wages, I have already admitted.* The same influence, and for quite analogous reasons, may be exercised by differences in the cost of producing human beings.

If, however, the expression is to be interpreted in the wider sense, that the absolute height of wages is finally determined by the pain of labor, or by the cost of producing human beings, then, as it seems to me, Professor Marshall has taken a position which cannot be maintained. This, so far as the pain of labor is concerned, I have endeavored to show in a previous chapter. In regard to the cost of producing human beings, a twofold objection suggests itself: First, this statement is hardly verified by experience, for modern economists are quite generally agreed that the "iron law of wages" cannot be interpreted as meaning that the necessary cost of maintenance is a fixed, definite amount, toward which the wages of labor must in the long run tend. On the contrary, they are agreed that the wages of labor may permanently exceed that amount, which hitherto has been regarded as the amount of the necessary cost of maintenance. And when this excess of the wages of labor above the cost of maintenance does disappear, it is really due to the fact, that the better conditioned laboring population have so accustomed themselves to the higher standard of life, that much that before was a luxury is now a necessity. In

*See above, p. 24.

an agreement between cost of maintenance and wages of labor obtained in this way it can hardly be said that the cost of maintenance is the determining, and the wages of labor the determined element.

Second, this last explanation is not satisfactory because it simply leads us around in a circle. According to this law of cost, the price of the means of maintaining the laborer (as bread, meat, shoes, coats, etc.), is to be explained by the value and price of the labor expended in the production of these commodities. If we start with this proposition, we can hardly continue, and say that the price of the labor is to be resolved into the cost or price of the means of maintaining the laborer. I have elsewhere dwelt upon the unsatisfactory nature of this explanation,* and so need not elaborate upon it at this point. Nor have I any ground for thinking that Professor Marshall and the other moderate representatives of the modern English school would accept the "iron law of wages" in any literal sense, with all the theoretic and practical consequences which this would involve.

Under these circumstances I do not believe it is possible to give a scientific explanation of the absolute height of wages, without some reference to that standard upon which, in the first of the above quoted statements, Professor Marshall seems inclined to base the market or demand price of labor. This is the marginal utility of the labor, or, otherwise stated, the value of the product of the last or marginal laborer. This explanation must, however, be supplemented in many and in part important details, by reference to the influence of the painfulness of labor and the cost of maintenance, though these can never entirely replace the above explanation. Even though for scientific purposes we were permitted to neglect the periods of short and moderate length, we could not explain those long periods to which we had limited ourselves without reference to other elements,

*In a paper, replying to Dietzel, on "*Wert, Kosten und Grenznutzen*," in Conrad's *Jahrbücher*, third series, book iii, p. 332.

besides the painfulness of labor and the cost of maintenance.

But we are not permitted, even for scientific purposes, to neglect these short and moderate length periods. On the contrary, any serviceable explanation of the value of wares, which could be included under the law of cost, must be based, clearly and distinctly, upon the actual rates of wages during the periods under consideration, periods which are really long, though they may seem relatively short. The important point is that wages during these periods still come under the influence of that determinant, to which Professor Marshall refers as the "demand price for labor."

This point is just as important as it is simple. In order to convince ourselves of its truth, we need only keep clearly in mind what it is, that the law of cost really accomplishes, in relation to the price of goods, and how this result is brought about. The typical effect of the law of cost is to change the chance and uncertain fluctuations which the price of goods undergoes, into a regular oscillating motion like that of a pendulum. In this motion the price always tends to return to the cost as to an ideal resting-place. Though the price seldom remains for any long time at this point, yet in a general way this might be called the normal position about which the price oscillates.

The wonderfully simple mechanism by which the law of cost brings about this result is as familiar as the law itself. It rests upon the very simple motive of self-interest. If in any branch of production the price sinks below the cost, or in other words, if the market price of the product is lower than the value of the means of production, men will withdraw from that branch and engage in some better paying branch of production. Conversely, if in one branch of production, the market price of the finished good is considerably higher than the value of the sacrificed or expended means of production, then will men be drawn from less profitable industries. They will press into the better paying branch of

production, until through the increased supply, the price is again forced down to cost.

The law of cost operates, therefore, by changing the occupation of the productive power.* So long as the price tends to cause a change in the occupation of the productive power, it is itself not in a state of equilibrium. On the other hand, a condition of at least relatively stable equilibrium will be attained when in the different branches of production the price has so adjusted itself that the productive power does not tend to change its occupation. This would be the case, when, in all kinds of employment, equal labor received equal pay and unequal labor received proportionately unequal pay. Then the differences in pay could be regarded as a just equivalent for the special laboriousness or disagreeableness, or for the special skill or fidelity, etc., incident to certain occupations. Equal capital would everywhere receive the same rate of interest. Any excess above this could be regarded as a just equivalent for the greater risk, etc., incurred in that particular investment. We may, for example, assume that this point of equilibrium is reached, when in all branches of production the wages of an unskilled laborer are eighty cents, and the rate of interest on capital is five per cent.

Under this supposition the normal price, toward which according to the law of cost the market price gravitates, should be such as would correspond with an average wage of eighty cents, and a rate of interest of five per cent. The price of a commodity that costs three days of common labor would, according to the law of cost, gravitate toward two dollars and forty cents (interest being ignored). This would be true, whether or not this equalized rate of pay of eighty cents corresponded to the minimum of existence. It may be

*The change of occupation is not always brought about by individuals abandoning the occupations in which they are engaged. When in any branch of employment the decrease from death, etc., is not offset by the number entering the same, we have a change of occupation. Those who make up the difference have gone into other lines. Though operating more slowly, the effect of this is the same as if individuals made a direct change.

that when the minimum of existence is only forty cents, the rate of wages will not remain at eighty cents. A generation later it may sink to sixty cents, or even to fifty cents. While this would show that there is no fixed and absolute normal price,* it does not alter the fact that at the present time the price of the commodity, according to the law of cost, gravitates toward that price, which would give the laborer a wage of eighty cents. When we examine this gravitating motion more closely, it is manifest that we cannot say that "the price gravitates toward the rate of eighty cents," because the laborer's cost of maintenance is forty cents. Instead we must say, that the price gravitates toward the rate of eighty cents, because the rate of wages which obtains throughout the whole field of employment is eighty cents. In other words, in explaining the oscillating motion of prices, according to the law of cost, we cannot avoid assuming as a basis, a certain average or normal rate of wages as the prevailing rate for the period under consideration.

We will now repeat the question which was asked in the beginning of this chapter, a question which must be asked

* Professor Marshall has very correctly remarked that the use of the term normal is more or less arbitrary. A price which we would call normal, when we have in mind a period of a certain length, we would not call normal when considering a longer period ("Principles," Bk. vii., Ch. vi., § 4). Otherwise I would certainly insist that the real law of cost has to do with no longer period than is sufficient to allow the adjustment of the price of the ware to the equalized position of wages (and interest); the wider adjustment of the wages of labor to the cost of maintaining the laborer, which under certain circumstances might require a still longer period of time, is an entirely different problem. So far as this can be further maintained as a general law, it is in no sense an effect of the real law of cost, but should be regarded as the effect of another law—a law which has no actual connection with the real law of cost. It depends upon the action of quite different forces and in its results has but an external or non-essential similarity, which has led to the unqualified evil of confounding these two laws. The impelling motive of that law of cost, which really influences the price of wares, is usually a shrewd estimating of economic conditions, the striving for the greatest possible utility and the avoidance of harm. The motive of a pretended iron law of wages is on the one side the irresistibleness of sexual desire, and on the other the great mortality which results from insufficient food. But the effects of such natural forces can no more be credited to the vulgar economical law of cost than the aggregation of a great number of men in large cities can be credited to the law of gravitation, which of course, because of a similar play upon external analogies, has already been maintained by Carey.

if our explanation is to maintain a logical and coherent form: Upon what does this average or normal rate of wages, prevailing at any given time, depend?

We have already answered this question, or rather Professor Marshall has answered it, in the first of his explanations of the rate wages already quoted. In this he has declared, and we must perforce agree with him, that the price of a day's labor depends upon the value of the pure product of a day's labor. Or more correctly, upon the value of the product of the last employed laborer, in Professor Marshall's example the "marginal shepherds."*

This answer brings the whole doctrine of the law of cost to its final test. Upon the one side, this analysis of cost practically abandons the attempt to show that disutility is the essential element of cost. On the other side, the expression "value of the products of labor," makes manifest that we have not yet obtained the ultimate element, and that the analysis must be continued still further. Finally, the explanation seems even more than before to continue in a circle. In the name of the law of cost we explain the value of the product by the value of the labor expended in its production, and then explain the value of this labor by the value of the product.

There is manifestly a great discrepancy somewhere in this explanation. A discrepancy which the Austrian economists endeavor to avoid by a special interpretation of the law of cost.† Their efforts, of course, will not receive much encouragement from those writers who do not recognize the existence of this discrepancy. This includes the great

* I would not fail to mention that the position of wages which corresponds to or equals the "net product of the last employed laborer" is, according to Professor Marshall's views, in no sense a temporary market price, but a sort of "long period price," which requires for its development a more or less prolonged leveling process. It is a sort of centre of gravity for the oscillations of the supply and demand of labor.

† In this attempt Wieser has taken a prominent part. Compare his "*Ursprung und Hauptgesetze des Wirtschaftlichen Wertes*," 1884, page 139; and "*Der natürliche Wert*," 1889, page 164. Compare also the excellent résumé by Smart, in the editor's preface to the English edition of the last named work. London, 1893, p. xix.

majority of those who hold, wittingly or unwittingly, that the explanation of the value of goods in accordance with the law of cost is firmly anchored upon the elementary factor, "disutility." That this is not the case, I have endeavored to show; and I will now attempt to bridge the gap in the explanation of value, which my investigation has revealed. On the one hand it is held, that in numerous cases the price of the product, according to the law of cost, oscillates about some normal rate of wages, which rate does not correspond either to the "disutility" of labor or the cost of maintaining the laborer. On the other hand, Professor Marshall, in common with many other English and American economists, admits that the normal rate of wages is adjusted according to the value of the product of the last employed laborer.

VI.

WHAT THE LAW OF COST REALLY MEANS. FINAL RESULT.

The existing productive powers, inclusive of the most original and important of all—labor—seek employment in the various opportunities for production that present themselves. Naturally, of course, they first engage in those branches of production that are most profitable. But as these are not sufficient to give employment to the whole productive power, some of this power must engage in successively less productive occupations, until finally all of it is employed. This gradual extension to less profitable occupations may be seen in the production at one and the same time, of more valuable goods, and of others, which from the very beginning were less valuable, because the demand for them was less urgent. But the important case of this gradual extension to less profitable employments is found elsewhere. In any branch of production which hitherto has been very profitable, the amount produced tends to increase. Hence, according to well known principles, we are compelled to market the increased product at a diminished price.

The demand arranges itself in strata that vary with the desire and purchasing power of the consumers. Let us assume that of a certain kind of commodity, thirty thousand pieces are produced by one hundred laborers with an outlay in labor of one day out of the three hundred working days in the year. Let us further assume that these are marketed at the price of eighty cents each. There will then be among the purchasers possibly one thousand to whom eight dollars per piece would not have been too dear, either because it satisfied some pressing want, or because their great wealth makes the value of the monetary unit exceptionally low in their estimation. Then come perhaps, five thousand more purchasers who, in case it is necessary, are prepared to pay two dollars. Another six thousand, who, in an extreme case, would pay one dollar and sixty cents. Another six thousand who would pay only one dollar and twenty cents. Again, another six thousand who, at most, will pay only one dollar, and finally, the last six thousand who are prepared to pay only eighty cents. Below these comes, perhaps, another group of six thousand who would be willing to pay sixty cents, but for whom the prevailing market price of eighty cents is too high, and who, therefore, must decline to purchase.

Assuming the conditions of this example, a product of thirty thousand pieces corresponds to a market price of eighty cents. But manifestly, if the productive power were less; if, for instance, the number of laborers was only eighty and the amount produced only twenty-four thousand pieces, the market price at which the whole product would be sold might be one dollar. It is equally clear that with one hundred and twenty laborers and a product of thirty-six thousand pieces, the market price might not exceed sixty cents. In other words, the value of the product of one laborer when eighty laborers are employed, would be one dollar; when one hundred are employed, eighty cents, and when one hundred and twenty are employed, sixty cents. In the same way,

the market for the product of every additional laborer above one hundred and twenty must be found at a still lower point in the demand scale. Or at any given time there is a group of the least capable or willing buyers that corresponds to the last employed group of laborers. The valuation of this group of buyers determines, in the first instance, the value of the product of the last group of workers; and through this, since at the same time and in the same market, there can be but one price for the same product, the value of the product of every laborer in this branch of production.*

It even goes further than this, and determines the wages of the laborer. On the one side, no entrepreneur will, for any long period, pay his laborers more than he can obtain for the product of their labor. The value of the product will, therefore, be the upper limit of the rate of wages. Again, under conditions of free competition, he will not for any long time pay them less, for so long as the market price is in excess of the cost of production,† the entre-

* Professor Marshall, in his example of the marginal shepherd, has made a very useful application of this concept of the last employed labor, though in a somewhat different direction. The increase of product which results, when, without increasing the capital, we employ an additional laborer, he conceives to be the answer to the question, How much of the total product may be regarded as the product of labor, as opposed to product of capital? Professor Marshall also allows the last employed laborer to play a part in the question of the relation between the laborer and the capitalist, or in the question of the division of the price of their products; I, on the other hand, do not allow the last employed laborer to play any part in the question of the relation between laborer and consumer, or in the question of the determination of the height of the price of the product. Nevertheless, I believe there is no material difference in our positions. The truth is, that the "last employed laborer" in both cases plays the rôle ascribed to him. But since I have expressly excluded all factors of production except labor (see above page), there was no occasion for me to speak further of the division of the product between the laborer and the capitalist. In my book on "Capital," I have given special attention to this question. In our present discussion, we would not insist upon every point involved in that abstraction. (See page 11.)

† I beg the reader not to forget that in this investigation we ignore all factors of production except labor, especially the so-called abstinence. If we did not do so, we would somewhat complicate our example. Besides the cost of labor, we would have to take account of the cost of abstinence, must then subtract this latter from the market price. Then all conclusions, which we have here developed for the relation between the total market price of the product to the wages of labor, would have to be developed, for the relation of the market price of the product, diminished by the other costs of production, to the wages of labor.

preneur obtains a profit; but he or his competitors will be tempted by this to increase their production, and so to employ more laborers, until the difference between the valuation of the last buyer and the wages of the last laborer disappears.

The same forces, which, in every branch of production, tend to fill the gap between the value of the product of the last employed laborer, and the rate of pay in this branch of production, tend also to fill another gap. Under conditions of perfectly free competition, there cannot, in the long run, be any serious difference in prices or wages in those branches of production, that are in free communication with one another. In the long run, the product of a day's labor and the labor itself cannot have a value of one dollar and twenty cents in the woolen industry, for instance, and only forty cents in the cotton industry. This would immediately give rise to a tendency in the productive forces to change their occupation, a tendency which would continue to operate until both of these branches of production, together with all others in communication with them, had been brought into a condition of equilibrium.

But where will this point of equilibrium be? This must be decided within that general field of employment which includes all the freely communicating branches of production; and it must be decided upon the same grounds or reasons which we have found to be effective for a single branch of production. There is a total or aggregate demand for all the products of labor. This is as limitless as our desire for well being, for enjoyment or for the possession of goods, and is graduated according to the intensity of this desire. If our desire for any product is very intense, and our means of payment abundant, then to us the marginal utility of the product will be high, while the marginal utility of money will be low. In other words, we will be willing to pay a higher price for this product than we would if our desire for it or our ability to pay for it were less.

Hence, in the general, as in any special field of production, there may be several strata of demand. There may be one which in an extreme case would be willing to pay eight dollars for the product of a day's labor. Another might be willing to give two dollars, while others would find their limit at one dollar and sixty cents, one dollar and twenty cents, at one dollar, and at eighty cents. There may remain still others who desire to purchase, but whose wants are not sufficiently pressing or whose purchasing power is so limited that they either will not or cannot pay more than fifty, forty or twenty cents, and even less, for the satisfaction of that want to which the product of a day's labor would be devoted.

To meet this practically unlimited demand we have a labor power which in comparison with this demand is always limited. It is never sufficient to satisfy all our desire; if it was we would be in paradise; we must, therefore, always choose which of our desires we will gratify. Under the influence of self-interest we will satisfy them according to the height or amount of the fee which we are willing to pay for their satisfaction. That stratum of the demand which is prepared to pay eight dollars for a day's labor will not suffer any inconvenience for lack of the desired commodity. So, too, that stratum of the demand which is willing to pay two dollars will not suffer any inconvenience. Nor will those suffer that are prepared to pay one dollar and sixty cents, one dollar and twenty cents, one dollar, etc. But the point must finally be reached where such satisfaction cannot be obtained. This point will, of course, vary with the circumstances or conditions of particular lands or times. Here eighty cents, there sixty cents, and elsewhere forty or even twenty cents, but such a point will always and everywhere be found. Let us assume a concrete case in which this point is at eighty cents. The existing productive power is here fully employed in the satisfying of those wants, for whose satisfaction we are willing and able to pay eighty cents for a day of common labor. In this case the stratum

of the demand whose valuation is eighty cents is the last stratum for the satisfaction of whose desires the last laborer is active.* It is the valuation of this stratum which determines both the value of the product and the wages of labor. All those desires for whose satisfaction we are either unwilling or unable to pay at least eighty cents must remain unsatisfied. This on the one hand will affect some of the unimportant needs or desires of the well-to-do class, on the other, alas, it will affect many of the more important needs of those whose means are limited, whose entire purchasing power has been exhausted in providing for still more pressing wants.

Let us now assume that, under otherwise unchanged conditions, there is an increase in the number of laborers entering into the problem, say through the sudden abolition of the standing army, or through a great influx of laborers from other lands. The additional laborers must and will find employment in providing for a still lower and hitherto unsatisfied stratum of the demand, that stratum, for instance, whose valuation is only seventy cents. This stratum is now the lowest for which the last laborer is active, and its valuation determines both the value of the product and the wages of labor.†

* The fact that there are always a number of laborers out of employment tells in no way against my contention; it is a result, not of an excess of labor force, but of those never-failing disturbances of the organization of the entire, yet insufficient, supply of the labor forces.

† For the sake of the critical reader I would here remark that I am well aware that if we assume an increase in the labor forces we cannot at the same time assume that the other conditions remain entirely unchanged. The increase in product which results from an increase in the number of laborers will also bring with it an increase in the purchasing power or in the demand. But if, as in the text, we assume that with an unchanged condition of capital and land, the labor alone is increased, the increase in the demand for labor and the products of labor would not be strong enough to completely compensate the increase in the supply of labor, for the increase in product thus obtained cannot be wholly applied to the indemnification of labor, some fractional part of it must be given as tribute to the other co-operating factors in production, Capital and Land, for these factors have, under our supposition, become relatively scarcer than the factor, Labor, and so are in a position to insist on the payment of this tribute. It results from this, that this increased product of labor can no longer be taken up by that stratum of demand,

What, under these conditions (the statement of which I hope will meet the approval of my honored English and American colleagues), is the rôle played by the law of costs? An exceedingly simple one. It guarantees that the existing productive power shall be directed to the satisfaction of the existing needs, according to the height of the fee which they are able and willing to pay. It brings about for the productive power in an indirect way, just what occurs in the case of the finished product in a direct way, upon every open market the supply of the finished product goes as far as it will reach to the best paying of those who desire to purchase. The market price of the same ware, on the same market, at the same time, is uniform. This fixes, very clearly and definitely, the boundary between those who are willing and able to purchase at that price, and those who are willing to do so but not able. If, for instance, the market price is eighty cents, then all those to whom the money marginal utility (*Geldgrenznutzen*) of the commodity is eighty cents, or more, will provide themselves with the commodity, all those to whom the money marginal utility of the commodity is less than eighty cents must deny themselves this commodity. No one will intentionally reduce the price of his commodity, to those who are willing and able to pay one dollar and twenty cents, in order to favor those who will or can pay only forty cents.

This same function is performed for the productive power by the law of cost. The latter does not meet the consumers and their needs directly; it does not come in contact with them upon a common market; but it reaches the public through the money price which the public puts upon the

which can pay eighty cents, but must find its market in a deeper, though it may be only a little deeper, stratum of the demand. I would also remark, that the question touched upon in this note is a most difficult and complicated one,—it contains, perhaps, the most difficult part of the difficult theory of wages,—and that I do not for a moment think that I have exhausted the subject with these rather brief, and I fear somewhat obscure remarks. I would only call attention to the fact that I have not lost sight of a difficulty, the complete exposition of which would lead us too far afield.

finished product. This competition (*Werben*) is extended over as many parts of the general market as there are different kinds of products. But this competition, though widely diffused and indirect, eventually results in the establishing of a certain market price for the productive power. This market price of the productive power appears in each single branch of production as the cost of the same. It operates like a speaking trumpet through which the supply price in other and distant parts of the general market is made audible in the part where we are situated. Those interested in one part are notified of the conditions which obtain in the general market and are thus enabled to govern their actions according to these more general conditions.

Let us now return to our example. We will assume that, in the general field of production or employment, the market price of the product of a day of common labor, and thus the wages for a day of such labor is eighty cents. We will also assume that in some special departments, as cotton manufacturing, because of some unfavorable combination, the value of the product of a day's labor has fallen to sixty cents, while at the same time, the wages of labor being eighty cents, the cost of production is eighty cents. What is the meaning and effect of this rate of cost of eighty cents? It does not mean that the laborer cannot live on less than eighty cents; or that the labor involves a degree of disutility which he will not endure for less than eighty cents. It means, and that quite clearly, that there are enough people in the world who will give eighty cents for a day's labor, or for the product of the same, to keep all the productive power active, and therefore that it would be foolish to ignore this offer, and employ the productive power in the service of people who are able and willing to pay only sixty cents for a day's work.

Let us now assume, that in the woolen industry the product of a day's labor, through some favorable combination, is worth one dollar and twenty cents, while the cost is only

eighty cents. This is clearly nothing else than advice to those interested, that in the general field of employment a day's labor cannot obtain more than eighty cents, and therefore that it is wise to listen to the favorable offer that we have been ignoring, namely, the offer of those people who are willing and able to pay for the product of a day's labor in the woolen industry, not indeed all of one dollar and twenty cents, but something more than eighty cents. This advice bears fruit through the action of the watchful self-interest of the entrepreneurs. In obedience to the law of cost it levels the abnormal prices of sixty cents and one dollar and twenty cents, that prevail in different parts of the general market, to the normal price of eighty cents. This means nothing more than the bringing about of that disposition of the productive power, which insures that the best paying wants shall always be satisfied first. At the outset, according to our illustration, those needs whose money marginal utility was eighty cents and sixty cents were satisfied, while those whose money marginal utility was between eighty cents and one dollar and twenty cents remained unsatisfied. Eventually a readjustment is effected so that everywhere and in all branches of production, the productive power is employed in the service of the best paying wants. This takes place successively from the highest down to those whose money marginal utility is eighty cents. We may conclude then, that in this and in all similar cases the law of cost has no other function than to bring all products of equal origin into line with each other. The self-evident proposition that the same product, on the same market, at the same time, must have the same value or price, is extended by the law of cost a step further, and gives us the proposition that products of like origin must have the same value or price. But how high this value or price will be, neither proposition informs us. The self-evident proposition, that one bushel of wheat has the same value as another similar bushel of wheat—gives me no starting point from

which I can determine the value of both bushels. In the same way, in the cases described, the law of cost gives me no starting point from which I can determine the absolute height of the price line; to which, according to that law, the price of all products of equal origin are brought. When we take a certain limited view of the question we do seem to get an answer. As when we confine ourselves to a single branch of production and think of the amount of the cost as something that we determine independently of our problem. But we might just as well argue, in the case of our two bushels of wheat, that according to our proposition, one of these bushels has just the same value as the other. We also *know* that number one is worth one dollar, therefore, according to our proposition, number two is worth one dollar. But the value of number one is just as much a subject for investigation as the value of number two, and hence, our answer does not give us the value of either. This is true of the height of the cost in every branch of production. We must, in every case, go back of the apparent answers until we find the real answer. In the case of the two bushels of wheat this answer lies close at hand, but in the case of costs in general, we must survey the whole field of production and finally find our answer in the following elementary proposition:

There is a certain limited quantity of productive power which at any given time, under the conditions set by the technical development of that time, can bring forth only a certain limited quantity of products. These products, through the action of certain leveling influences in the different branches of production, are disposed of in a regular order of succession, in each case, to the best paying purchaser. The satisfaction extends downward in the scale of wants until a certain equalization to the (money) marginal cost of production is attained, and it is this which decides the value of all goods that come under the dominion of that leveling influence. It determines the value of the products as well as the value of the productive power, which is represented by the cost.

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The representatives of the English theory have chosen the figure of the two blades of a pair of shears, in order to show the opposition between the English and Austrian conception of the law of cost. I gladly follow them in the use of this figure but with the conviction that the interpretation which my English colleagues have given to it, must be supplemented as follows:

In the case of freely reproducible goods, it is undoubtedly true that the price is fixed at that point where the money marginal utility of the commodity to those desiring to purchase it crosses the line of the costs. In our example, the last purchaser of wool will be the one whose valuation will correspond with the amount of the cost, or with eighty cents. In this case it is entirely correct to say that utility (relative marginal utility for those desiring to purchase) and cost operate together in the determination of price, like the two blades of a pair of shears.

But now follows the unavoidable question: What determines the amount of this cost? The amount of the cost is identical with the value of the productive power, and, as a rule, is determined by the money marginal utility of this productive power. This, of course, has reference to the existing conditions of the demand for and supply of this productive power in the various branches of production. If in the above formula we substitute for "cost" this explanation of cost, we would have the following: "The price of a definite species of freely reproducible goods fixes itself in the long run at that point where the money marginal utility, for those who desire to purchase these products, intersects the money marginal utility of all those who desire to purchase in the other communicating branches of production."

The figure of the two blades of a pair of shears still holds good. One of the two blades, whose coming together determines the height of the price of any species of product, is in truth the marginal utility of this particular product. The other, which we are wont to call "cost," is the marginal

utility of the products of other communicating branches of production. Or, according to Wieser, the marginal utility of "production related goods" (*productionsverwandten Güter*). It is, therefore, utility and not disutility which, as well on the side of supply as of demand, determines the height of the price. This, too, even where the so-called law of cost plays its rôle in giving value to goods. Jevons, therefore, did not exaggerate the importance of the one side, but came very near the truth when he said "value depends entirely upon utility."

Almost, but not quite entirely, for as I have endeavored to show, and as Jevons well knew, disutility plays a certain part in the determination of value. A part, however, which, in our actual economical conditions, is quantitatively unimportant. It occurs in full force only, in the case of the few and unimportant products of our leisure hours. For the great mass of products which are the outcome of our regular occupation, this disutility either does not appear, or is only a very weak and remote element in the complex standard that determines the "height of the cost."* If we were to put this roughly into figures, we might say that the ten parts of that blade which represents the demand consist entirely of *utility*, while of the blade which represents the "cost," nine parts are utility and only one part disutility. On the whole then value depends nineteen-twentieths on utility, and only one-twentieth on disutility.

We must now consider a circumstance, which thus far in our argument we have intentionally ignored. Up to this point we have confined ourselves to those conceptions of the law of cost which come nearest to harmonizing with those of our opponents, namely, those which declare that there is a correspondence between the price and the historically reckoned cost, *i. e.*, the cost elements, labor and abstinence. It was only in this way that we could eliminate all those intermediate members, raw material, wear and tear of tools, etc.,

* See above page 24.

which in practice appear as part of the cost, and in common with most of our opponents, speak of labor and abstinence as the determining factors of cost.

We must not, however, forget that there is a second sense, in which the law of cost is susceptible of empirical demonstration, namely, the sense in which the law of cost asserts a correspondence between the price and the synchronously reckoned money cost of the entrepreneur.* When we carefully consider the historical and synchronous method of reckoning cost in their relations to each other, it is manifest, that while there is some connection between them, yet they are not entirely the same, either in their content or in the extent of their sway. The correspondence of the price with the historically reckoned cost involves the satisfying of much more severe and unusual conditions. The leveling feature, upon which both rules rest, must here operate unhindered through the whole of the complex system of production, down to the last elementary root. On the other hand, the gravitation of the price, toward the synchronously reckoned money cost of any particular stage of production, merely assumes that the leveling influence has free sway in this part of the productive process. The gravitation toward the synchronously reckoned cost is to a certain degree more readlly satisfied. For this reason it is more frequently operative, and hence there is a wide district, subject to its sway, which is not subject to the sway of the historically reckoned cost.

There are numerous instances in which the synchronously reckoned cost of a single stage of production is effective in determining the price of the product, although there may be no correspondence between the price and the historically reckoned cost. This may be due to the fact that the leveling influence may be temporarily inoperative through all stages of production, or though free for part of the distance, it may at some point be permanently hindered by some kind of a monopoly.

* See above page 15.

Let us illustrate this by an example. The production of one hundred weight of copper costs at a given time ten days of historically reckoned labor at eighty cents a day or eight dollars. This, of course, enters into the cost of all copper goods, and therefore into the price of copper wire, copper kettles, copper pans, etc. Now, because of a strong demand for electric wire the hundred weight of copper advances in price from eight to twelve dollars, nothing is more certain than that the coppersmith, the money cost of his material having risen, will advance the price of copper wire, etc. A copper kettle which weighs one hundred pounds and the production of which involved an expense of six dollars, had in the past a total cost of fourteen dollars; it now has an additional cost of four dollars and so must bring at least eighteen dollars, and this quite independently of the question, whether or not the historically reckoned cost of production has changed; whether ten or any other number of days of labor have been expended in its production; or whether we pay eighty cents or any other amount for a day's labor.

The fate of the "historically" reckoned cost will likewise depend upon a variety of considerations; difficulty may be encountered in producing the additional amount of copper which is necessary to supply the increased demand. It may be necessary to employ more miners, in which case it is quite probable that the wages of the miners will advance. Or, perhaps, though we can obtain a sufficient force of miners at eighty cents, it may be necessary to work poorer veins, in which a hundred weight of copper will cost not ten but twelve days' labor. In both cases the advance which first appeared in the money cost of a later stage of production, will be gradually transmitted, in a greater or less degree, to the elementary labor cost of the earlier stages of production. Finally, it is possible that we may be able to supply this increased demand for copper without any additional cost, or at the old rate of ten days of eighty cent labor to every hundred pounds of copper. In this case the increased

demand for copper will eventually be satisfied at this rate of cost. The price of the copper, as well as that of the copper goods, will then have a corresponding return motion until it reaches the original price of eight dollars.

But in either event, it still remains true that the price of copper goods may be determined, at least temporarily, by other conditions than their historically reckoned cost. In practice numberless instances of this kind arise. Even though in the long run the elementary "historical" cost plays an important part, yet time is necessary for its influence to be felt through the whole of our complicated system of production. During this time the stages not yet effected by this leveling influence will follow the lead of their special "synchronous" cost.

Let us now take a few examples, in which this leveling influence is free to operate over a limited area of the process of production, and then at a certain point becomes permanently inoperative.

Take a chemical product, which we will assume to be sold at any given time, at its actual cost of production, say eight dollars. Let us further assume that some discovery is made by which the cost of this material is reduced to four dollars, and that the discoverer patents the process and allows others to use it for a fee of two dollars. The price of this product will now permanently adjust itself to a money cost of six dollars, which exceeds the elementary cost of four dollars by the amount of the patent fee or royalty of two dollars.

Let us take another case, and assume that a hundredweight of coffee, when admitted into a country free of duty, will sell at a price which is just sufficient to cover its cost of production, which we will assume to be sixty-five dollars. Let it now be subjected to an import duty of fifteen dollars. The price must, of course, be high enough to cover this additional cost, and, therefore, will rise to eighty dollars, an amount which exceeds the elementary cost by fifteen dollars.

Here we have two typical examples of price variations, which will be found to include nearly the entire field of price phenomena, for there are at the present time very few products in which some patented machine or process, or some import duty on raw or auxiliary material does not play a part.

It is now time to ask: What has our theory to say about the determination of these prices of copper kettles, chemical products, coffee, etc.?

It must offer some explanation of these facts, since they are of such frequent and general occurrence. It is also manifest that it cannot explain them in terms of the elementary cost of labor and abstinence, nor in terms of the value of these elementary factors of cost, nor by a reference to the disutility which may be associated with the same. The price of the copper kettle has advanced from fourteen dollars to eighteen dollars, and the price of coffee from sixty-five dollars to eighty dollars, not because, but in spite of the fact, that the elementary costs have remained unchanged at fourteen and sixty-five dollars. Again, in the case of our chemical product, if the price depended upon the elementary cost, it should not stop at six dollars but should sink to four dollars. It is equally clear that all these cases of price variations are subject to the law of cost and are actually effects of this law. It would, indeed, be a very serious sin of omission, on the part of economic science, to attempt an explanation why the present prices of the several commodities mentioned in our illustration are just eighteen, six and eighty dollars, without any reference to the characteristic circumstance that these prices represent the present cost to the entrepreneur, and instead, content itself, with a vague reference to the relation existing between the supply of, and demand for these commodities.

The same considerations which in the past have forced us to supplement the general law of supply and demand through the more exact law of cost, makes it necessary to so interpret

the law of cost that it may include and explain the above variations in prices.

What now remains to be done? In our opinion, just that which the Austrian economists have endeavored to do.

The conception of a historically reckoned cost must be brought face to face with the conception of a synchronously reckoned cost, and due importance must consciously be given to each of the two conceptions. These two conceptions may, indeed, be put side by side, but are in no sense interchangeable. For the solution of different problems in our science, both conceptions are necessary. It is even necessary to distinguish between the different varieties of the "historical" cost. For certain explanatory and speculative purposes, it is well to have in mind the disutility of labor. In other cases (as in estimating certain technical advances in production), it is the quantity of labor that we must consider. In still others, it is the value of the labor that we must inquire about. There is not, as Professor Macvane thinks, only one "true conception" of cost. Professor Patten, although his limitations are not entirely satisfactory, comes much nearer the truth when he says that the competing concepts really belong to different branches of the theory, the one to the "theory of value" and the other to the "theory of prosperity."*

Again, we must not endeavor to find in the law of cost either more or less than the Austrian economists have found in it, namely, a universal law of leveling. And this is an influence which operates not merely upon certain final elements, but also at every stage of the productive process. There is a leveling or equating not merely of the final elements, labor and the disutility of labor, but also of productive goods and of utility with utility. This last takes place independent of, and ofttimes in direct opposition to the influence of the final elements. Why, in our example of the copper kettle, does the price rise from fourteen to eighteen

* "Cost and Expense," page 67. ANNALS, May, 1893.

dollars? Simply because through the common cost it can and must be leveled to the price of the other commodities produced from copper, *i. e.*, in this case to the price of the strongly demanded copper wire. But why have prices in the entire copper business advanced? Because, and in so far as, through the increased demand for copper, the marginal utility of this material has been raised. It is, therefore, an increase in utility and not in disutility, that here in the guise of cost dictates the advance of the price. The numerous instances of this kind which at once suggest themselves to the reader, confirm our earlier judgment of the important part which, under modern economic conditions, utility plays in the determination of cost.

It is a curious fact that the objection has been more than once advanced, that the Austrian economists have closed their eyes to the rich treasure of insight and knowledge which the great law of cost affords;* and that they have disdained to avail themselves of its help in the explanation of the phenomena of value. In reality as we have endeavored to show, the reverse of this is true. So anxious are we to coin the whole of this treasure, so strong is our desire not to neglect or discard one particle of the help which it offers us, that we object to a misleading interpretation of this law, an interpretation which would compel us to ignore the greater part of its influence. The character of the facts as well as the necessities of the science force upon us, as we believe, with equal imperativeness, the other universal concept, the concept which the Austrian economists have made their own, and whose essential features I will in conclusion recapitulate.

The variety of meanings that have attached themselves to the word cost have been the source of much confusion. There is, for instance, the cost, which, in the sense of the

* Compare for example B. Dietzel's writings, especially the paragraphs cited in my answer (Conrad's *Jahrbücher*), third series, book iii, page 327. See also Professor Edgeworth in the *Economic Journal*, June, 1892, pages 334, 337.

great empirical law of cost, operates as the determinant or regulator of price. To identify this either directly or indirectly with the personal sacrifice, laboriousness, pain or disutility that is imposed upon us by labor or abstinence, is an actual misunderstanding.

The "cost" of the law of cost is not the name of an elementary factor. It is a designation applied indifferently, according to the special circumstances of the case, either to sacrifice utilities embodied in goods, or to personal discomfort or pains, *i. e.*, either to utilities or to disutilities. The law of cost is always in the first instance a simple leveling principle. In order to determine what elementary forces are included under this title, we must inquire what it is, that under the name of cost, brings about this leveling. We then find that at first the marginal utility of one product is leveled to the marginal utility of other products, that are produced from the same cost good (raw material, machines, etc.), or it is a leveling of utility with utility. In most cases this leveling process not only begins but ends here. Only occasionally, under quite definite casuistic assumptions, is the leveling process carried a step further, and the utility of the good itself brought into equilibrium with the disutility endured by the producers. In this limited number of cases the general law of cost becomes a special law of disutility. The independent character of this law is shown by the fact, that while its domain is very limited, yet in one direction it extends beyond that of the classical law of cost.*

What then is the "ultimate standard" for the determination of the value of goods, in the search for which, men have been as indefatigable during the last one hundred years, as they formerly were in their endeavors to square the circle. If we wish to answer this question in a single phrase, then we cannot choose any less general expression than "human well-being." The ultimate standard for the value of all goods is the degree of well-being which is dependent

*See above page 29.

upon goods in general. If, however, we desire a more concrete standard, one that will give us a more definite idea, just how goods are connected with well-being, then we must take not one but two standards, which though co-ordinate in theory are yet of very unequal practical importance, because of the greater prevalence of the phenomena in which one of them is operative; one is the utility of the good, and the other is the personal sacrifice or disutility involved in the acquisition of the good. The domain of the latter is much more limited than we usually think. In the great majority of cases, even in those in which the so-called law of cost undoubtedly plays a part, the final determination of the value of goods is dependent upon utility.

Vienna. E. VON BÖHM-BAWERK.

[Translated by C. W. Macfarlane.]

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